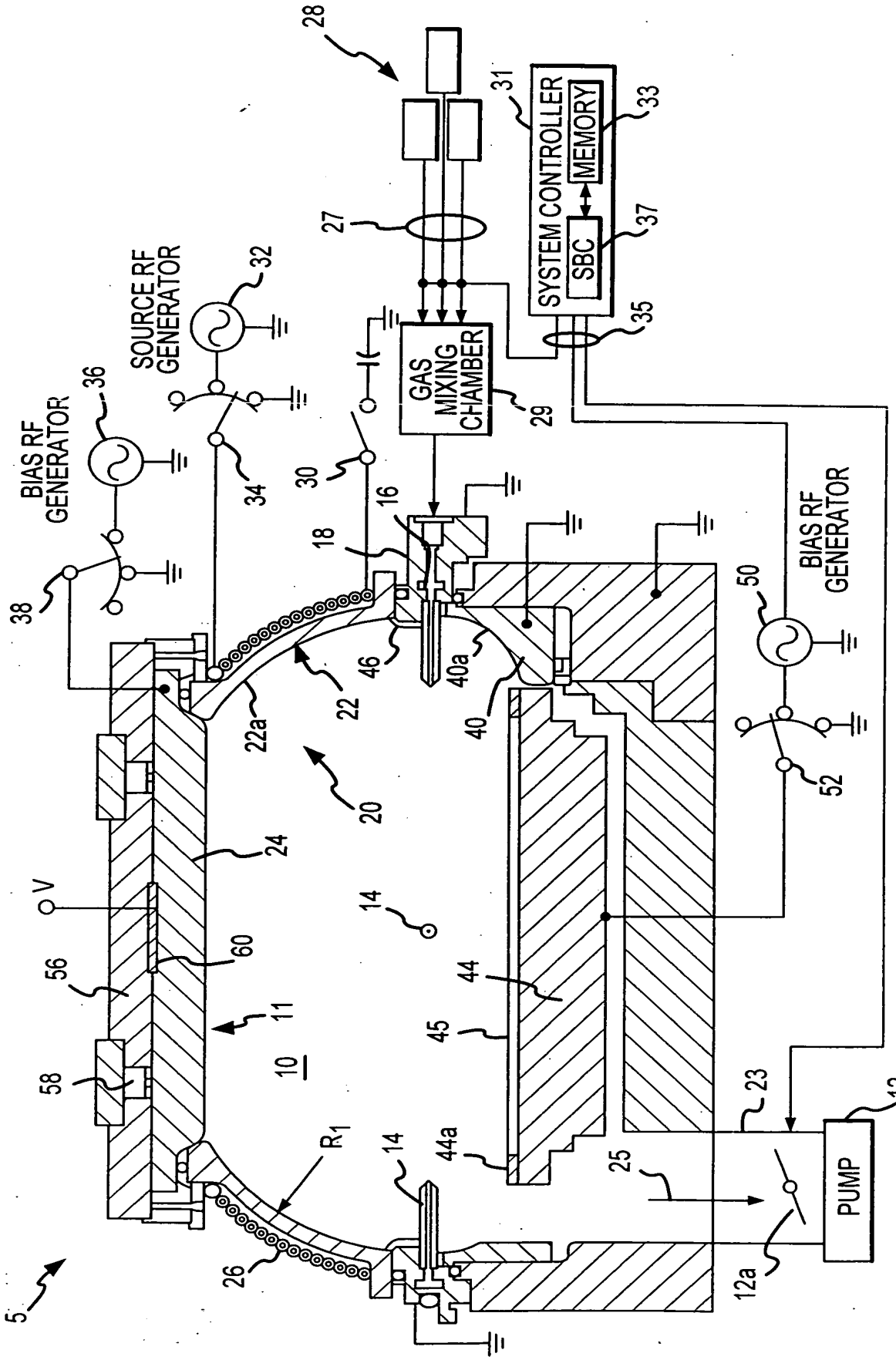
28
31
SYSTEM CONTROLLER
MEMORY
33
27
SBC
37
35
SOURCE RF GENERATOR
32
GAS MIXING CHAMBER
29
BIAS RF GENERATOR
36
30
16
18
34
38
BIAS RF GENERATOR
50
46
40a
22
22a
40
52
20
24
V
14
60
56
44
11
45
10
58
23
12
R1
14
44a
25
PUMP
26
12a
5

FIG.1A

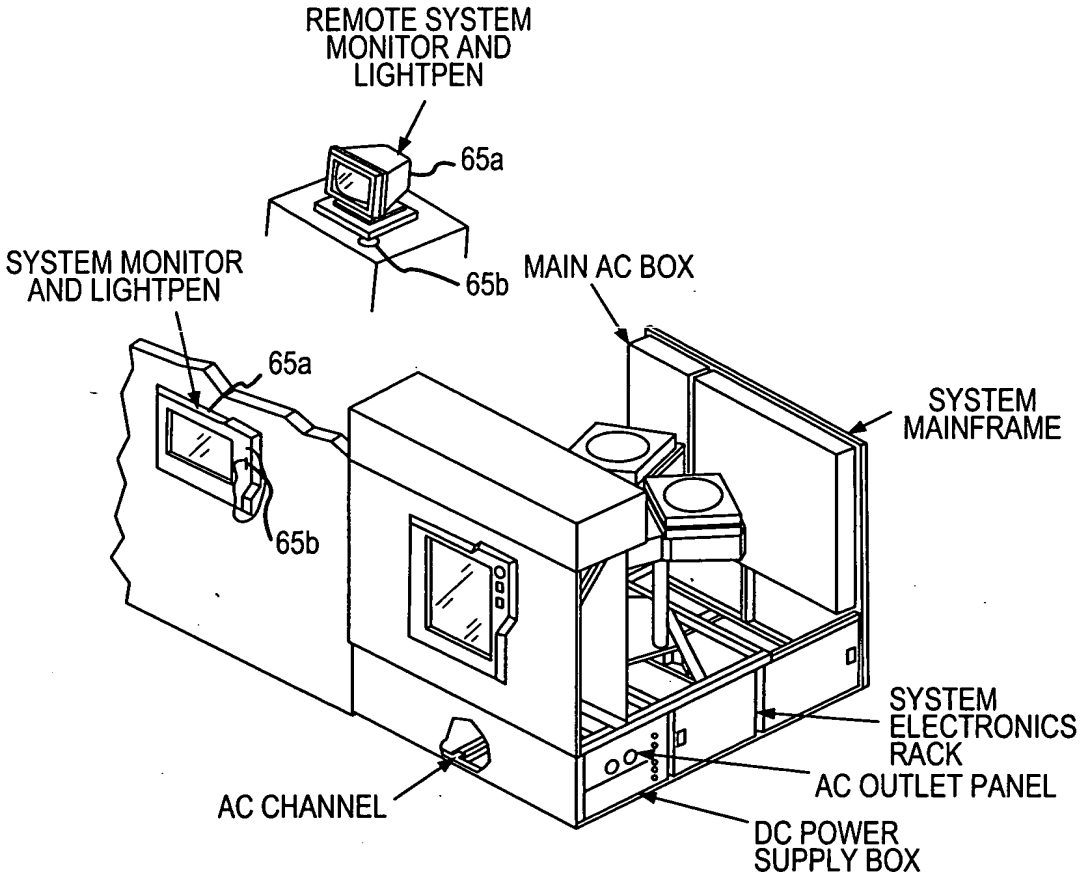
REMOTE SYSTEM MONITOR AND LIGHTPEN
65a
65b
SYSTEM MONITOR AND LIGHTPEN
65a
65b
MAIN AC BOX
SYSTEM MAINFRAME
SYSTEM ELECTRONICS RACK
AC OUTLET PANEL
AC CHANNEL
DC POWER SUPPLY BOX

FIG.1B

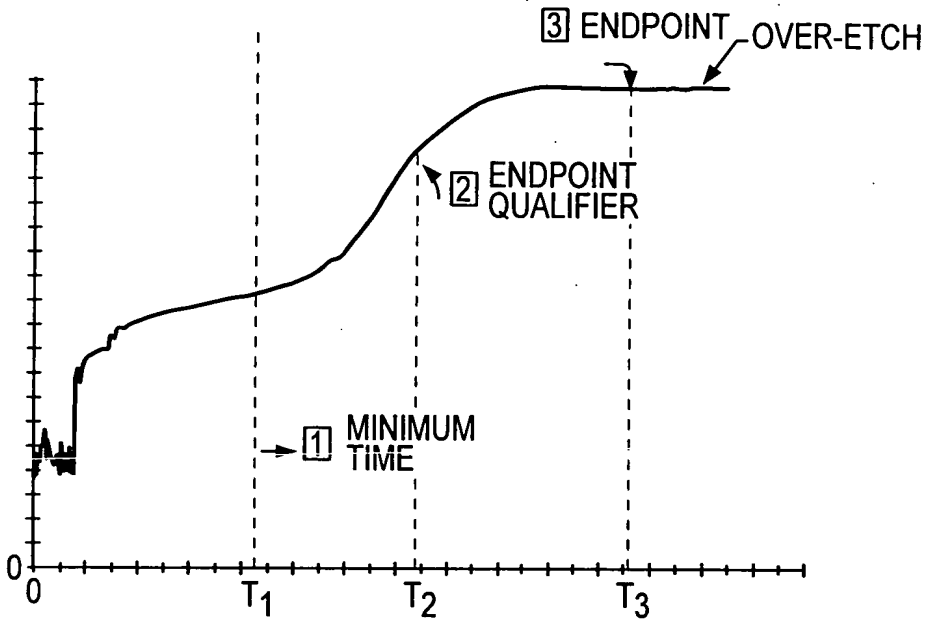

FIG.2
(PRIOR ART)

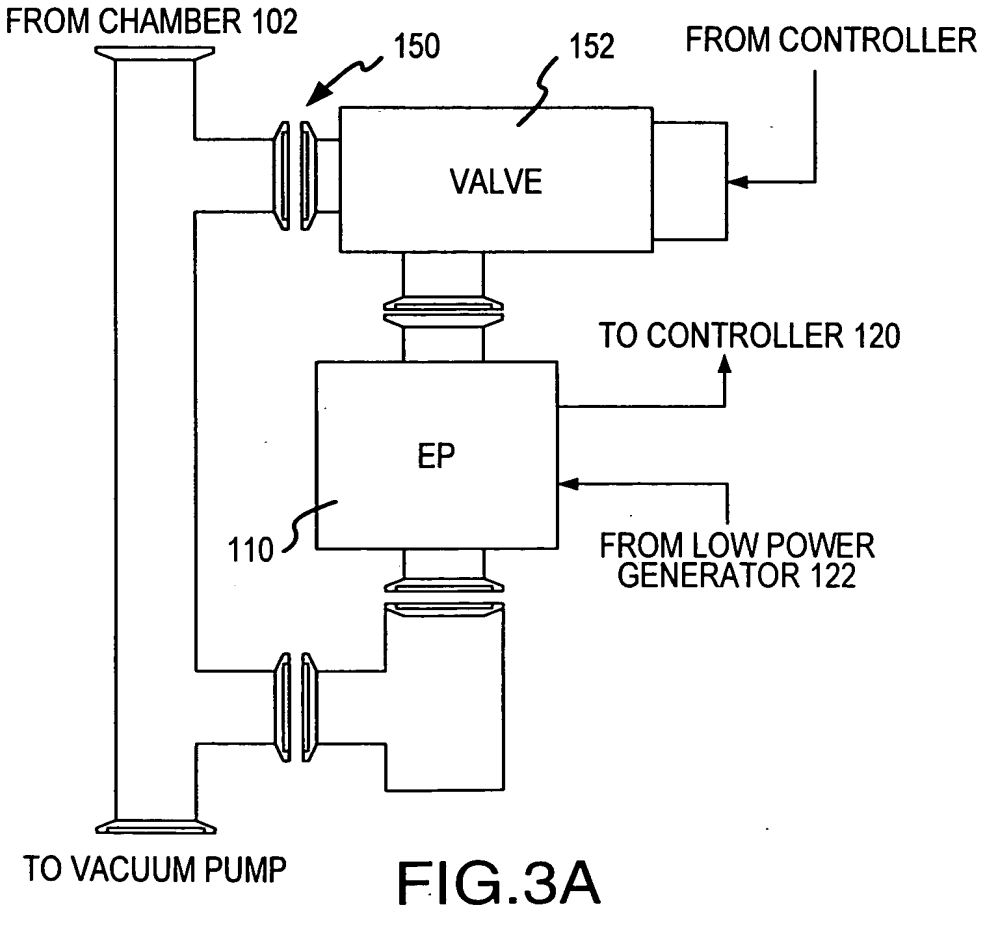

FIG.3A

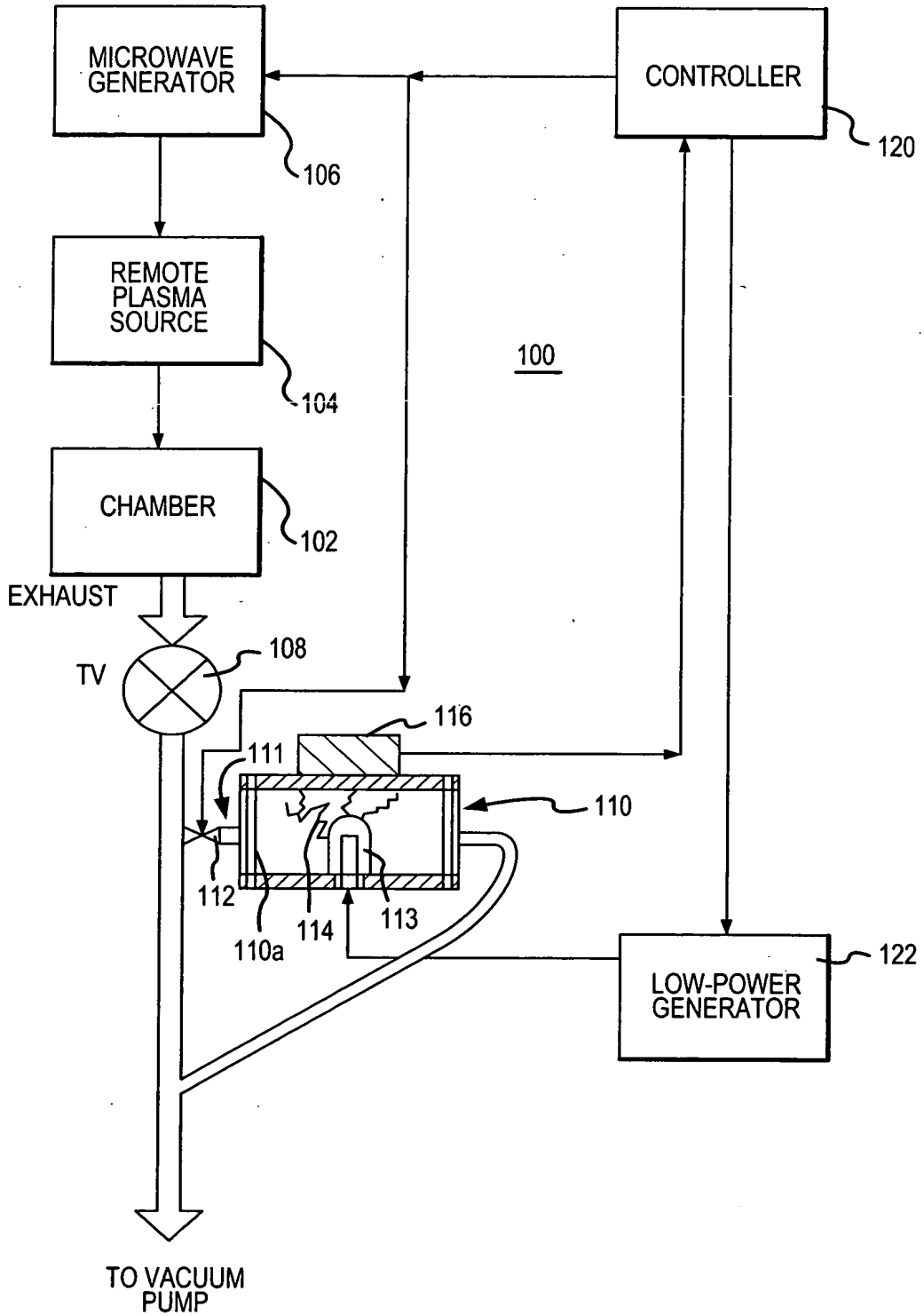
MICROWAVE GENERATOR
106
CONTROLLER
120
REMOTE PLASMA SOURCE
104
100
CHAMBER
102
EXHAUST
TV
108
116
111
110
112
110a
114
113
LOW-POWER GENERATOR
122
TO VACUUM PUMP

FIG.3

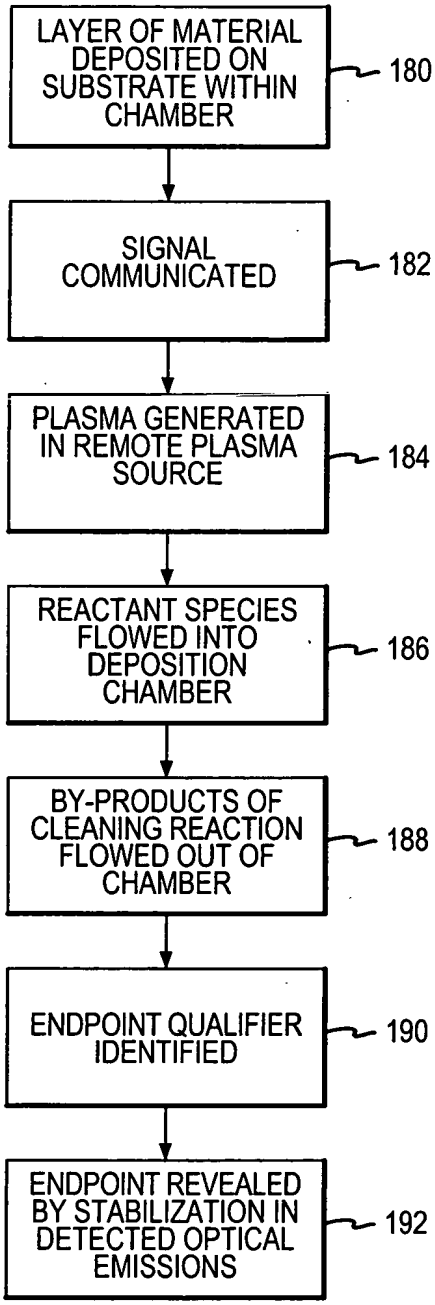
LAYER OF MATERIAL DEPOSITED ON SUBSTRATE WITHIN CHAMBER
180
SIGNAL COMMUNICATED
182
PLASMA GENERATED IN REMOTE PLASMA SOURCE
184
REACTANT SPECIES FLOWED INTO DEPOSITION CHAMBER
186
BY-PRODUCTS OF CLEANING REACTION FLOWED OUT OF CHAMBER
188
ENDPOINT QUALIFIER IDENTIFIED
190
ENDPOINT REVEALED BY STABILIZATION IN DETECTED OPTICAL EMISSIONS
192

FIG.4

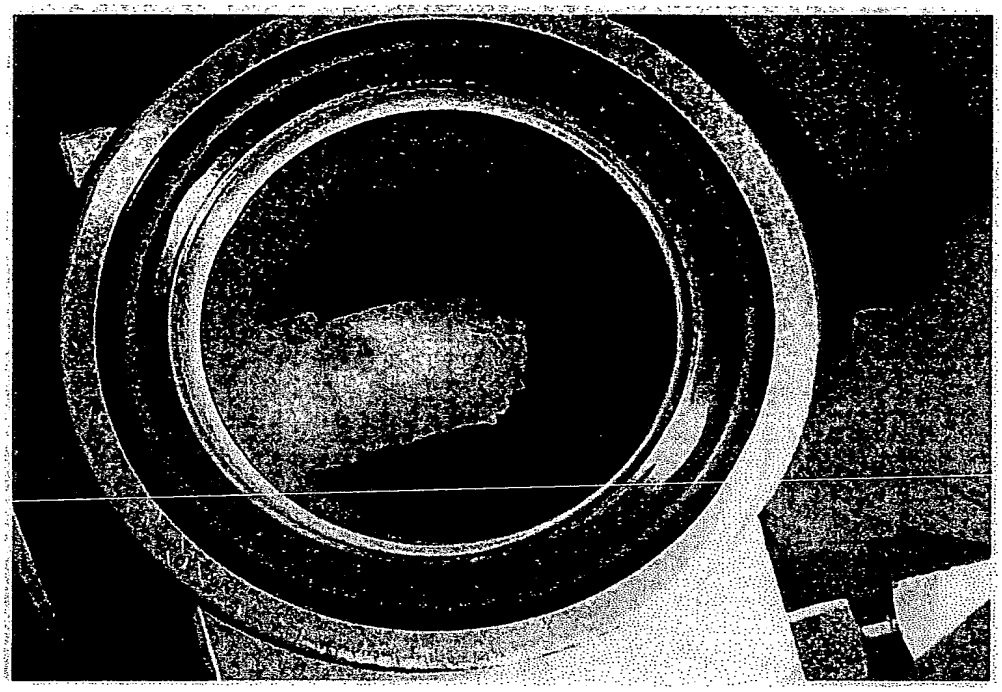

FIG.5A

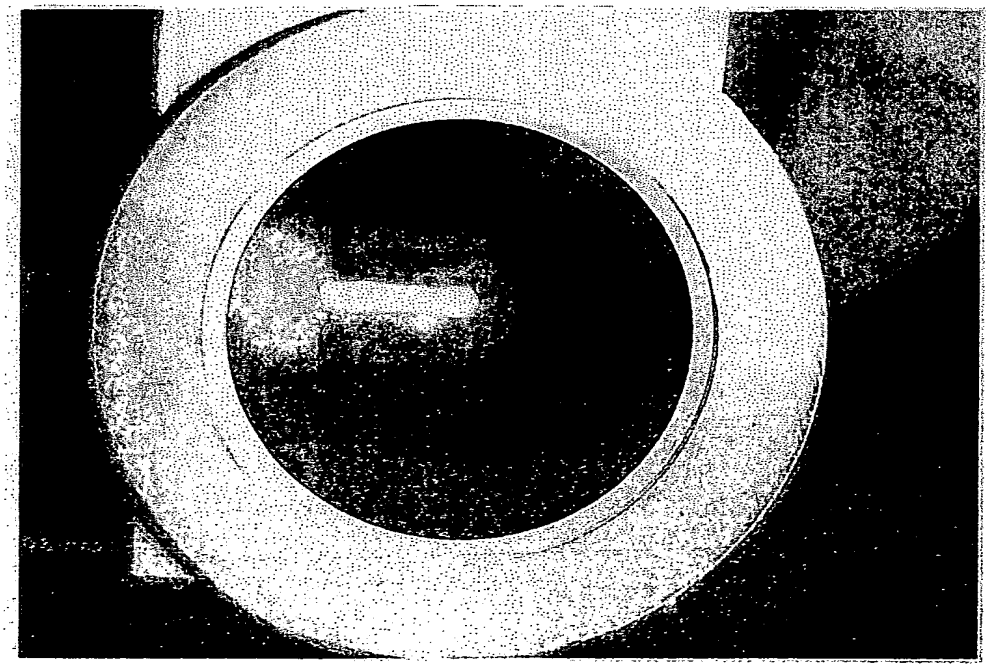

FIG.5B

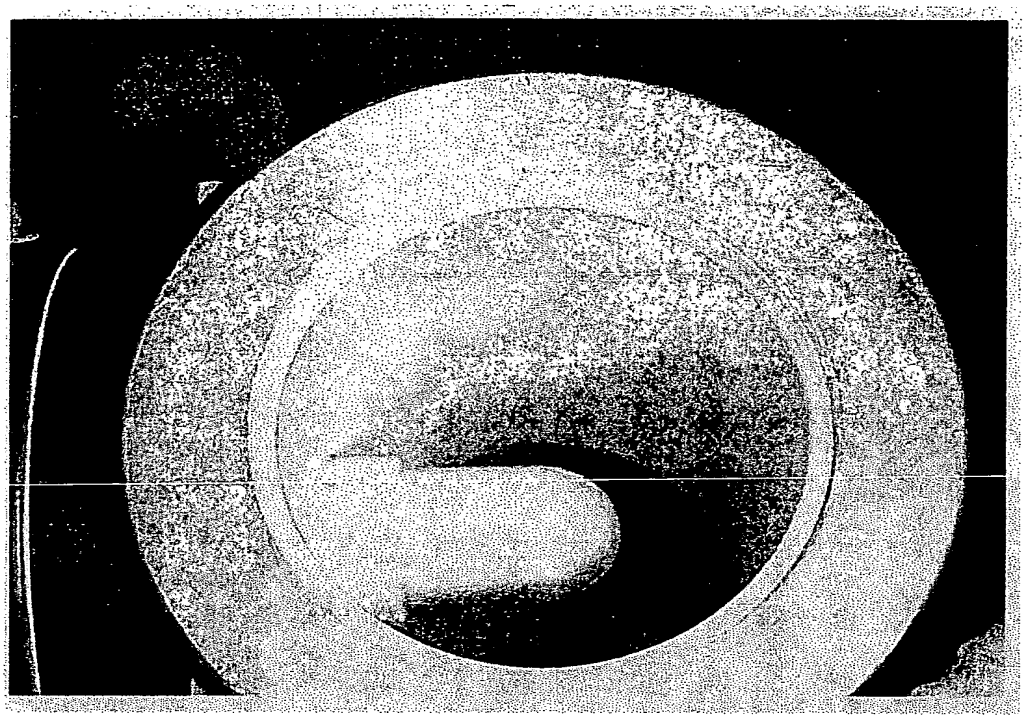

FIG.6A

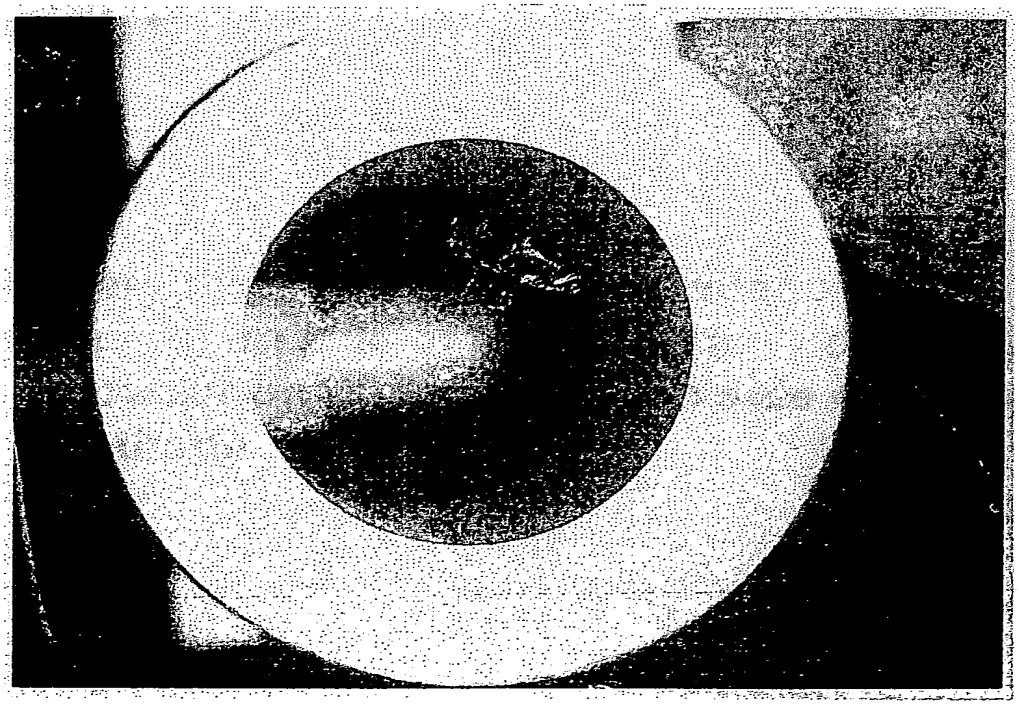

FIG.6B

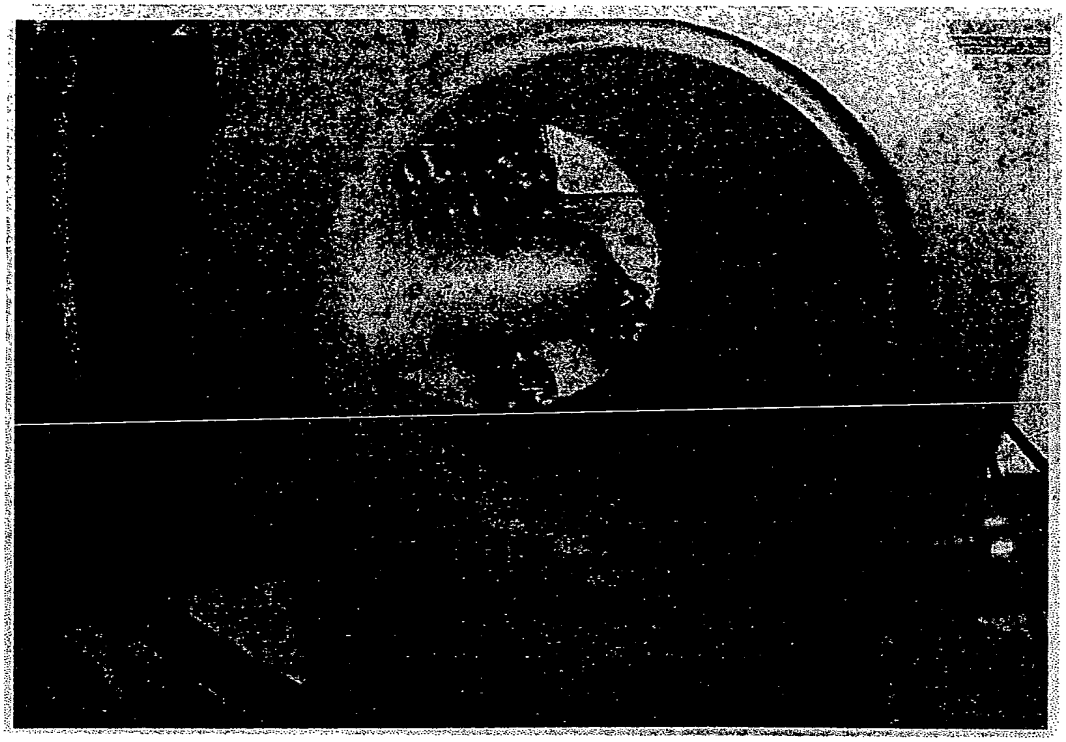

FIG.7A

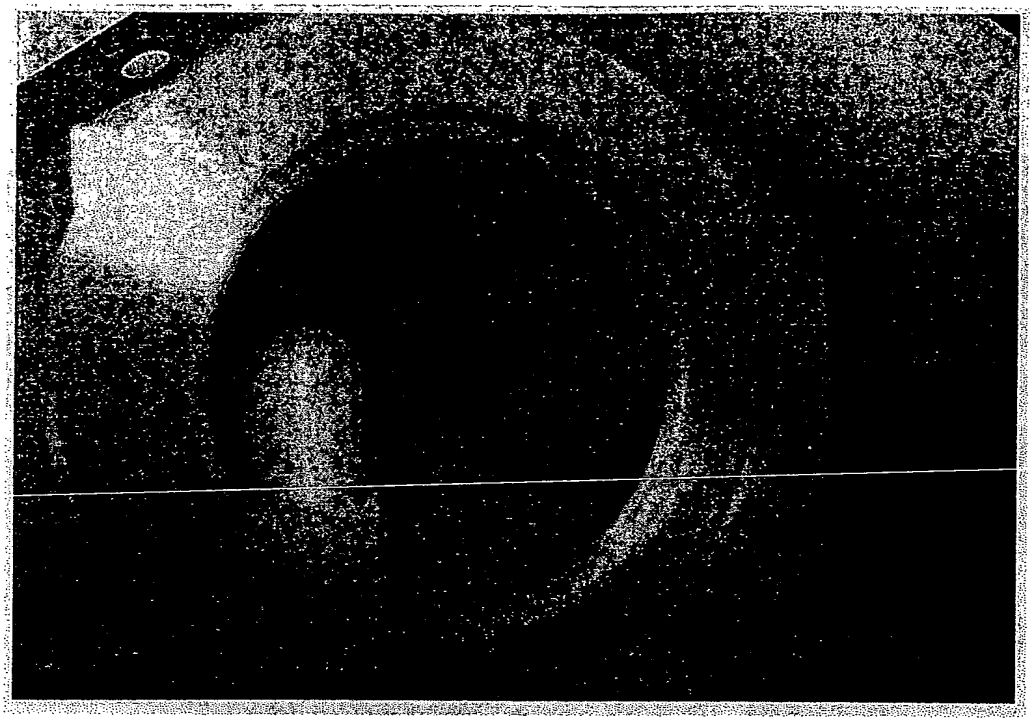

FIG.7B

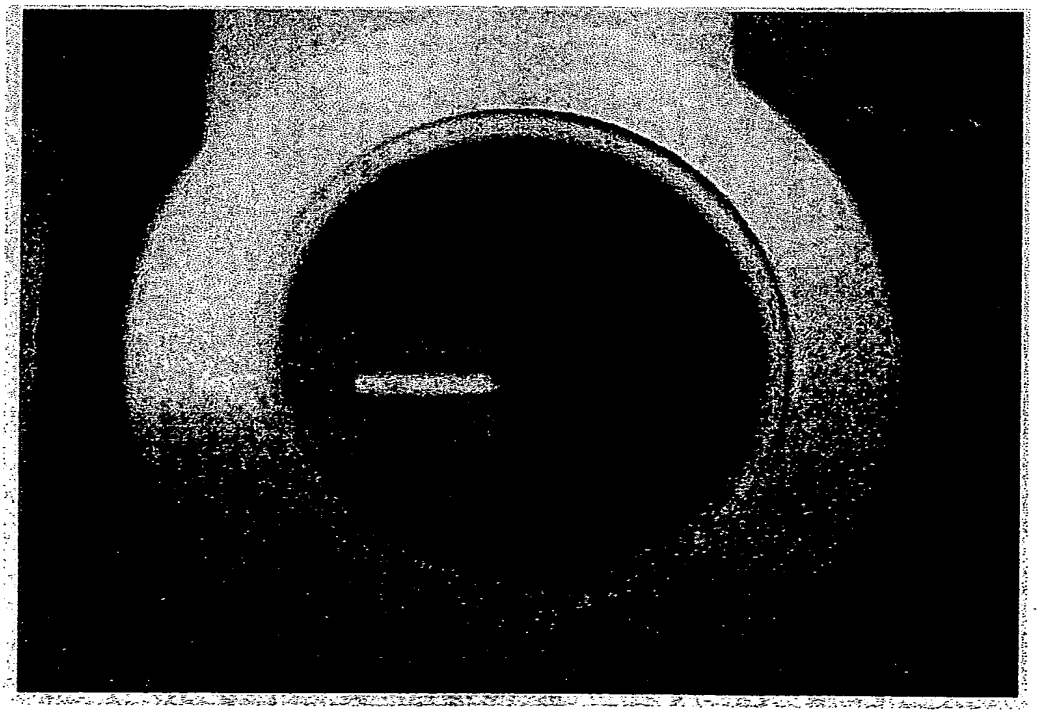

FIG.7C

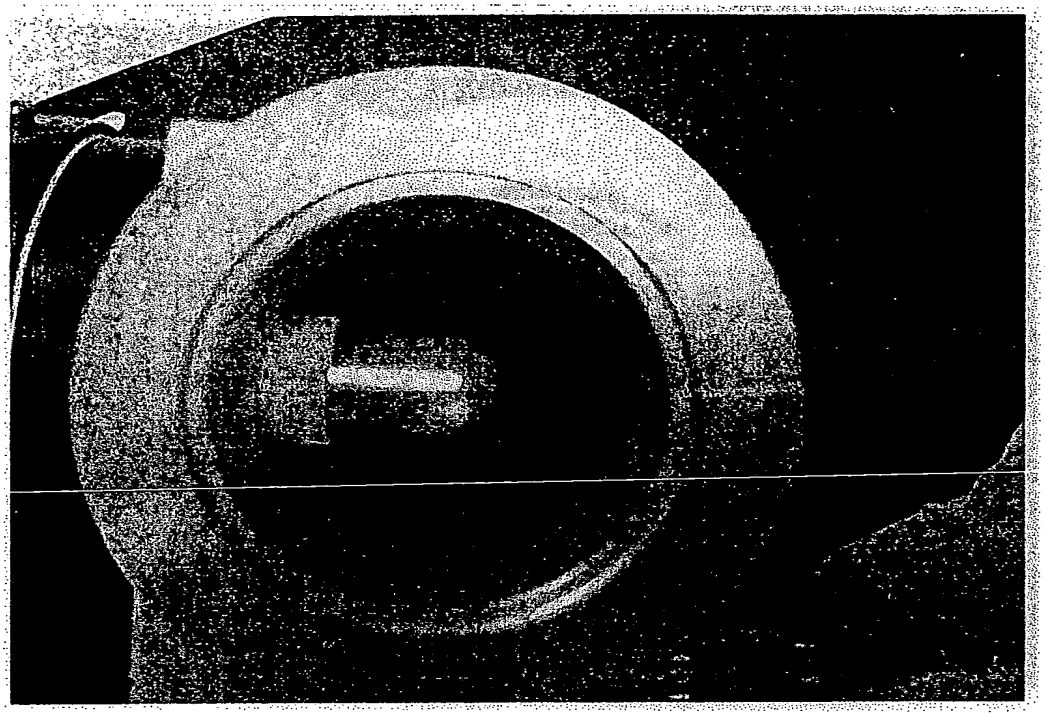

FIG.8A

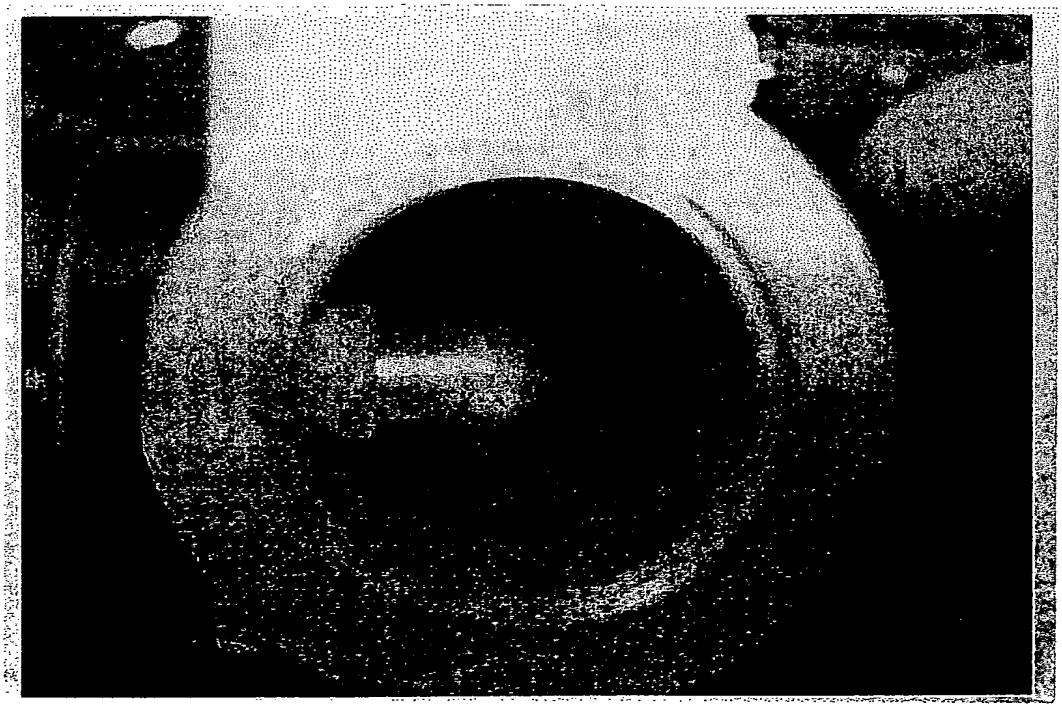

FIG.8B

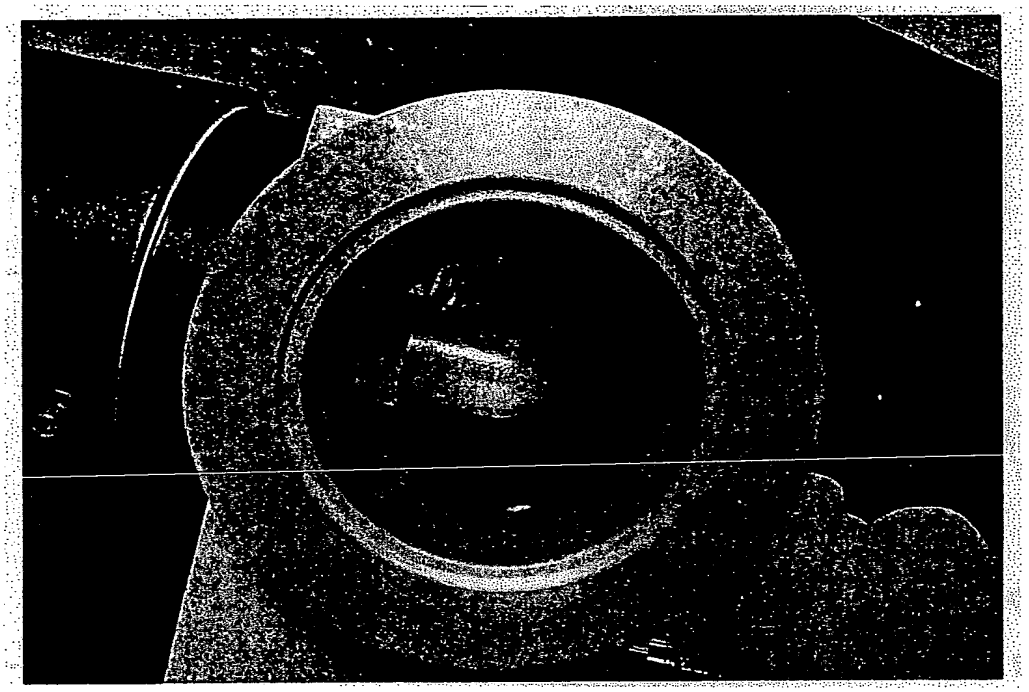

FIG.9A

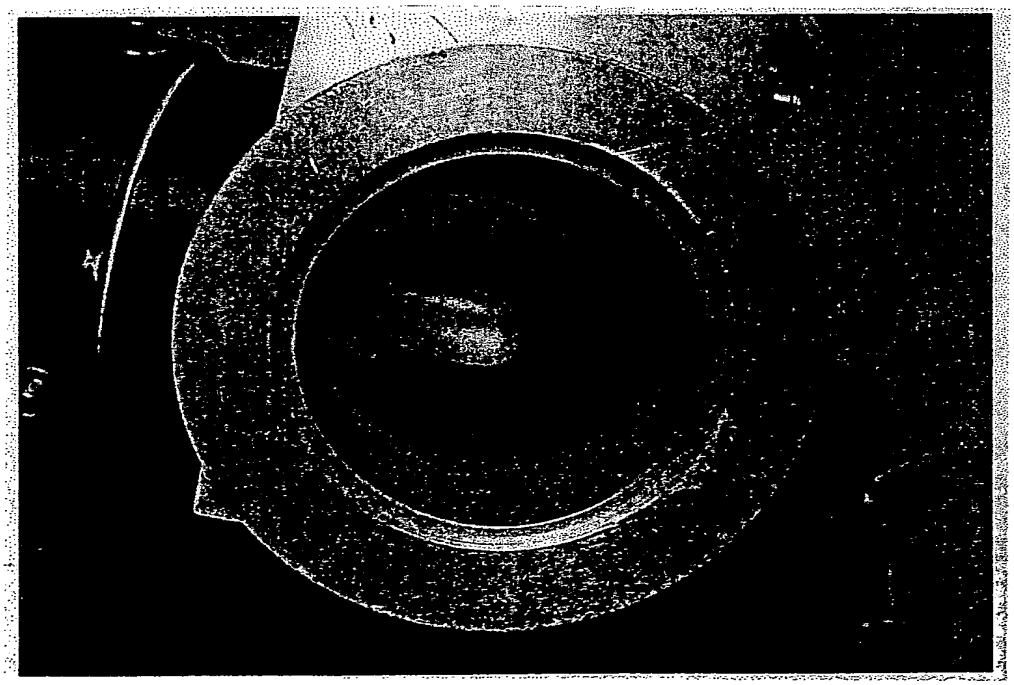

FIG.9B